



## **Coral Reef Protection in Cordelia Bank, Roatan Island, Honduras**

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Presented by: World Wildlife Fund (WWF-Mexico/MAR)  
Project support: Royal Caribbean Ocean's Fund  
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Photo: Staghorn Coral, *Acropora cervicornis*. © Ian Drysdale

## Introduction

In February 2010, the Ocean Fund awarded WWF a grant to work towards the protection and sound management of Cordelia Bank, one of the few remaining intact stands of endangered staghorn coral (*Acropora cervicornis*) in the Caribbean. Located off the coast of Roatan Island in the Honduran Bay Islands, Cordelia Bank sits between two cruise docks, including RCCL's and Carnival Cruise Lines. The area provides a sanctuary for fish like grouper, snapper, and the Caribbean reef shark and is an important source of coral spawn, critical because it can help to repopulate reefs of the Caribbean where staghorn has already disappeared.

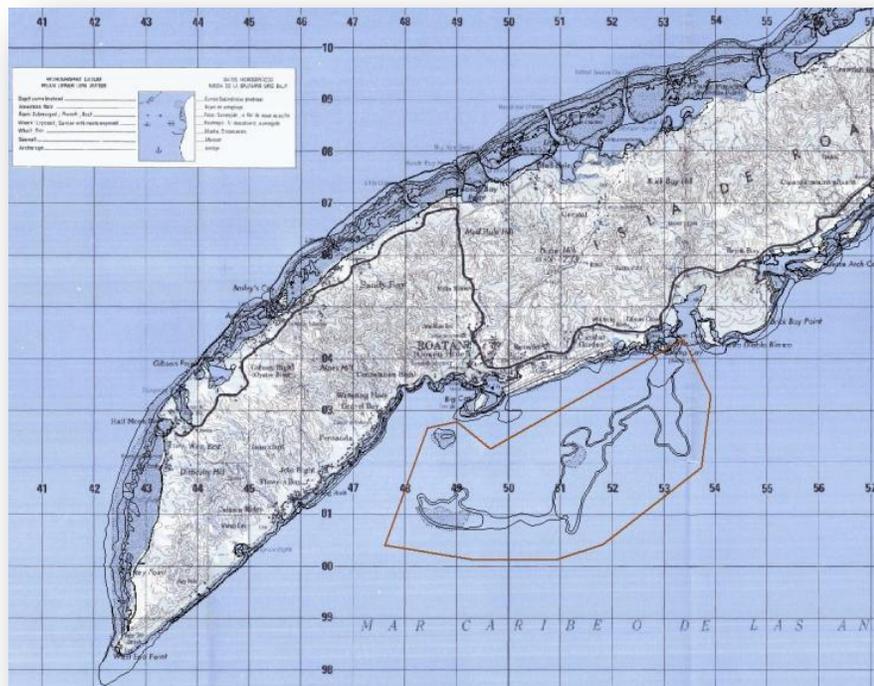
In 2009, WWF worked with the Roatan Marine Park and Luna Consultores to develop the "Ficha Tecnica", which describes the ecological significance and other background information about an area proposed for protection. The completion of the document provided the foundation for the next phase of work funded by the Ocean Fund. The "Ficha Tecnica" includes a Technical Data Sheet about the importance of Cordelia Bank, Rationale for the Request to Declare Banco Cordelia a Special Marine Protection Area, and the management objectives to promote as special marine protected area. *Please refer to Annex 1 for a summary of the Ficha Tecnica developed by WWF in 2009.*

With the Ocean Fund Grant we were able to engage local communities to move forward with the first step after the legal declaration of the Bay Islands National Marine Park: consolidate the Community Advisory Council for Cordelia Bank. Consolidating the advisory councils is a necessary step prior to designing the management plans. Ocean fund was catalytic to assuring the long-term legal status and conservation of Cordelia Banks by setting the stage for successfully designing the management plan.

## Location and Maps

*Banco Cordelia is a barrier reef located south of the Juan Manuel Gálvez International Airport, on the Southwestern side of Roatan. The proposed area covers approximately 17 square kilometers.*

*The orange polygon refers to Cordelia Banks*



Map 1. Spatial and Physical Location according to a National Geographic Institute Map Sheet (1:50,000 scale) with PMAIB Reef Layer (2001)

The government issued the official declaration for the Honduran Bay Islands Marine Park in June 10, 2010 the Legislative decree No. 75-2010.

This declaration created a marine park encompassing the coasts and marine waters surrounding all three of the Bay Islands (Roatan, Utila, and Guanaja). The Bay Islands National Marine Park area covers 647, 152.49 hectares and these limits are classified in Special Marine Zone, Buffer Zone and Coastal Zone.

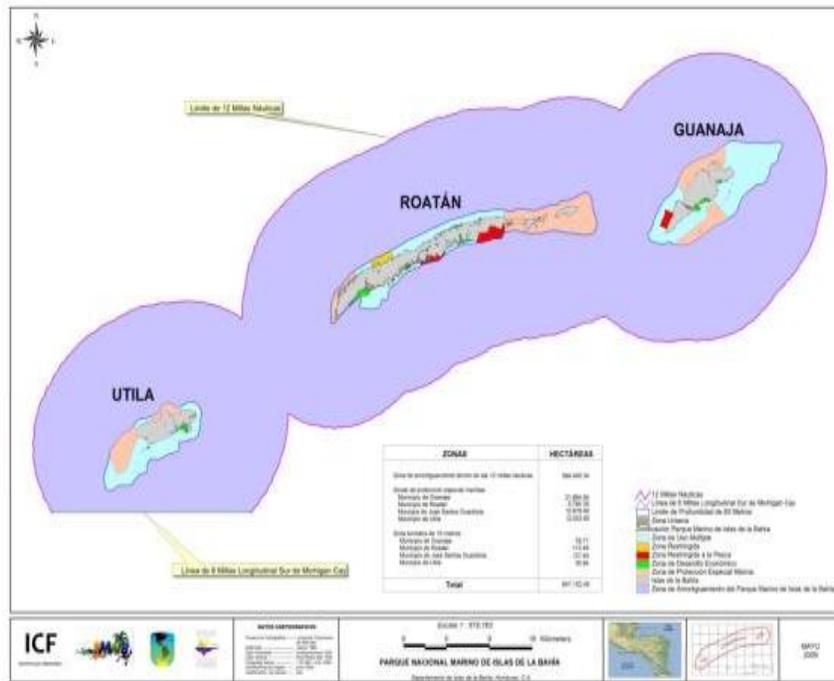


Figure 1. Bay Islands National Marine Park

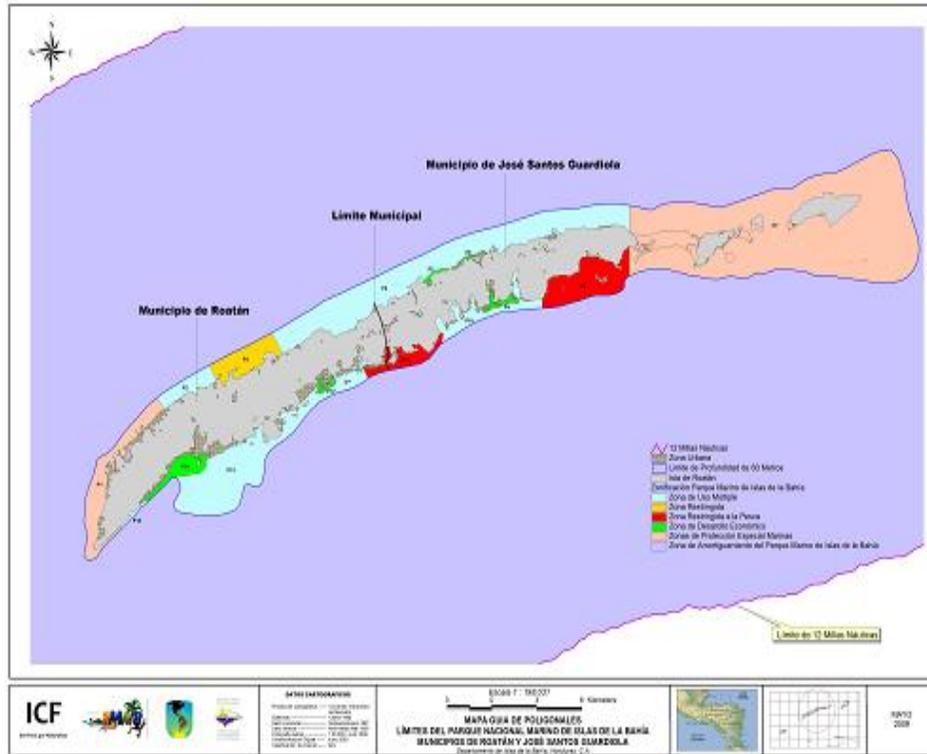


Figure 2. Roatan Island

Although we had originally envisioned our role after the declaration to focus on developing a management plan for Cordelia Bank, in February 2011 we received a letter from the state agency in charge of protected areas: the Department of Forest Conservation Institute (ICF) signed by Jose Antonio Galdamez (Vice-Minister ICF) requesting WWF support for a range of other activities not including a management plan. These included organizing and strengthening local, municipal, and departmental advisory boards; providing support to ICF and Honduran Tourism Institute (Instituto Hondureño de Turismo – IHT) to implement visitors’ centers on Utila and Guanaja Islands; socializing the Honduran forestry law and the Special Law of the Bay Islands; and sharing the information generated by WWF previously to serve as the basis for formulating the management plan. Taking into account the government requests and our goal of assuring Cordelia Banks effective conservation, we decided to move forward with:

1. Support in organizing and strengthening departmental, municipal and local advisory councils specifically those concerning Cordelia Bank

2. Socialization of the Forestry Law, Protected Areas Act, General Regulations and Special Law of the Bay Islands among Cordelia Bank stakeholders.
3. Sharing the technical information gathered by WWF previously to serve as an input in the preparation of the management plan for the Marine Park.

In the following information we summarize the activities, meetings and workshops organized during this project:

- Cancun, Mexico. December 2-8, 2010. Participation in the Climate Change Conference COP16. Official Official presentation to local, national and regional stakeholders of the “Report Card for the Mesoamerican Reef 2010” which included a special section highlighting Cordelia Bank as a success story “fragments of hope”.

The current ecosystem health status of the coral reef ecosystem of the Mesoamerican Reef System is presented in the Report Card 2010 produced through the Healthy Reef for Healthy People Initiative. The report presents an easy to understand overview of reef ecosystem condition and stewardship by providing a straightforward five point grading system from 'very good' to 'critical' for seven reef indicators. The report was presented during the Climate Change Conference COP16 with the participation of the different organizations, governmental institutions and civil society. *Please refer to Annex 1 for the Cordelia Banks Fragments of Hope, inclusion on the Report Card for the Mesoamerican Reef.*

- Tegucigalpa, February 2011. Official communication from the government ICF (Oficio SDE-APVS-033-2011)

Official communication signed by Jose Antonio Galdamez (Vice-Minister ICF) with the request to support the government in:

- a. Support in organizing and strengthening departmental, municipal and local advisory councils in this case for Cordelia Bank
- b. Socialization of the Forest, Protected Areas Act, General Regulations and Special Act Bay Islands.
- c. Sharing the information generated by WWF as an input in the preparation of the management plan for the Marine Park.

- Roatan, Bay Islands. 5-12 April, 2011. Meetings with the representatives of ICF, local meetings with the Mayor Mr. Julio Galindo, Port of Roatan, CORAL, RMP, BICA, Municipality, Zolitur, TNC.

The representatives of the ICF presented to local stakeholders the requirements and process of establishing *Community Advisory Councils* and their responsibilities in the management of protected areas. The Councils are a community based participation, consultation and support platform to the ICF and municipalities to manage the natural resources, protected areas, forest areas and wildlife as stated in the Forestry Law (Decree 98-2007), articles 21 to 28.

The councils are thus key participants in the design and support to the development of the Management Plan for the Bay Islands Marine Park. Each Community Advisory Council includes representatives of the communities' organizations such as: Patronatos (community government), water boards, women's groups, tourism community groups, school boards, fishermen organizations or representatives and other social and productive organizations in the communities.



Photo 1 and 2. Meeting in the Municipality of Roatan with representatives of the NGO's and local government.

From the presentations and discussions on the importance of active community participation via the Councils, WWF with Ocean Fund support was able to facilitate the establishment of two Community Advisory Councils to represent Cordelia Bank stakeholders.

Other communities in Roatan, Utila and Guanaja are going to consolidate their Community Advisory Councils with support from USAID's Program for the Management of Aquatic Resources and Economic Alternatives (MAREA).

The Mayor of Roatan, Mr. Julio Galindo offered their support through the Environmental Municipal Unit and the Department of Community Development so that ICF, WWF could successfully gather all the required information to convene with the local communities and representatives in coordination with NGO's: Roatan Marine Park, Coral Reef Alliance, The Nature Conservancy, Port of Roatan.

As a result of the many meetings, discussions and facilitated workshops, WWF was able to consolidate two Community Advisory Councils that represent the community interests relevant to Cordelia Banks. Establishment of these councils will enable the process to now define the management plan for Cordelia Bank as a special marine area and also for the Bay Islands Marine Park.

The conservation and biological relevance of Cordelia Banks as a healthy stand of Staghorn coral (*Acropora cervicornis*) was highlighted not only among Honduras stakeholders but regionally and internationally thanks to its inclusion in the Report Card for the Mesoamerican Reef, the publication widely regarded as the pulse on the health status of the reef.

The results also highlight the relevance of being able to adapt to local processes to ascertain project relevance. Had the project sought to carry out the management plan as objective 1 originally envisioned, the results would not had respected a local process thus lacking validity.

#### Next steps towards Cordelia Banks effective conservation

- 🚧 Training and capacity building for the Community Advisory Councils on aspects related to the socialization of the Protected Areas Law, and consolidate the councils' participation in the preparation of the Management Plan for Bay Islands National Marine Park

- ✚ Organize a trip of government representatives (Minister and Congress) to Cordelia Bank to ensure the protection of its staghorn coral stands.
- ✚ Assure Cordelia Bank is established as a Marine Sanctuary for Sharks (Honduras and Palau Islands are the only two countries in the world where it illegal to fish sharks.)
- ✚ Promote the establishment of Community Marine Reserves or no-take zones in coordination with the fishermen associations and the Community Advisory Councils.

## References

- Brooks, A.E.2007. My Roatan Tour Manual. Honduran Institute of Tourism. 105pp.
- WWF. 2009. Ficha Técnica para Banco Cordelia, Roatan.

## Annex 1. Technical documents highlighting Cordelia Banks conservation relevance

### Summary of the Ficha Tecnica prepared by WWF in 2009

*The three coral banks composing the Banco Cordelia contain large extensions covered by Acropora cervicornis (staghorn corals, see photograph), a species whose abundance has declined up to 98% in the Caribbean. “Banco Cordelia shows signs of being the last large site of A. cervicornis populations and of being the source of coral larvae with the potential to replenish coral populations.”*

*Although Banco Cordelia is located in an area under much anthropic pressure, its coral population is remarkably healthy. The banks are located in Southwestern Roatan, between the two largest populated areas in the island: Coxen Hole and French Harbour. Coxen Hole is the departmental capital, where there are a considerable number of business establishments and an increase in population density due to immigration. French Harbour is an industrial and business area where industrial fishing, seafood packing plants, and shipyards, among other businesses are located.*

*“Cordelia banks are separated from the shore by depths of more than 150 meters and strong marine currents parallel to the Roatan coastline, these two conditions may be a factor limiting the negative impact of anthropic influences.”<sup>1</sup> “Satellite bathymetry data show that there is considerable distance between the banks and the fringing reef and that they are exposed to Southeastern winds, which allow quick removal of contaminants from the area.”*

*Proposed Management Objectives for Cordelia Banks Special Marine Protection Area.- Improving fisheries and income opportunities from sustainable tourism.*

- *For all users to harmoniously order, use and capitalize on the area’s natural resources.*
  - *To support the way of life and the economic activities that are in harmony with nature and the preservation of the communities’ social structure and culture, in order to maintain the diversity of the landscape and associated ecosystems.*
  - *To promote education and scientific activities that contribute, in the long term, to the welfare of residents and to the development of public support for protection of the area.*
  - *To use organized civil-society groups, such as associations, religious groups, fishermen’s groups, and non-governmental organizations so that, together, they may undertake the adequate management of the area.*
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- *To provide support to local municipalities, through their Municipal Environmental Units in order to manage the area and to promote sustainable development of assorted businesses.*

Success story included in Report Card for the Mesoamerican Reef 2010

### **Cordelia - Newly discovered coral forest.**

**Source: Report Card for the Mesoamerican Reef (Page18) [www.healthyreefs.org](http://www.healthyreefs.org)**

Cordelia Banks is a group of three coralline banks located off the southern coast of Roatán Island (Honduras). One of banks alone extends over an impressive 52 acres of thriving marine life, made possible by a healthy “forest” of the prolific staghorn coral, which in spite of its proximity to the shore and heavy human activity, has been spared from the population crash caused by disease throughout the Caribbean. There is a good chance that Cordelia boasts the largest living stand of staghorn coral in the Caribbean. Just to the east of the Cordelia Banks lies one of the last productive grouper and snapper reproductive aggregation sites on the southern coast of Roatán, where upwards of 200 individuals have been seen displaying spawning behavior. Another nearby dive site is home to a large group of gray reef sharks. This amazing biodiversity is all the more curious given its location right between two busy towns – French Harbour and Coxen Hole – and directly in front of two active cruise ship docks!

Protecting and managing Cordelia Banks is a major goal of several conservation organizations working in concert with local authorities. A sound marine recreation plan could secure the integrity and financial viability of this unique area. Organizations such as the World Wildlife Fund, the Roatán Marine Park, Coral Reef Alliance, MAR Fund and others are actively working to defend this jewel of our Mesoamerican Reef. For more information visit: [www.roatanmarinepark.com](http://www.roatanmarinepark.com)

### **Fragments of Hope**

In 2006, Caribbean staghorn and elkhorn corals were the first coral species to be officially listed by international conservation authorities as critically endangered—signaling they are just one step away from becoming extinct in the wild. The good news is that these corals are the fastest growing of all “reef building” species in the Caribbean, as they naturally reproduce asexually through fragmentation. Reef restoration projects in Belize since 2006 have taken advantage of nature’s ability to affix loose coral fragments back to the reef after damage from storms or ship groundings. In Mexico this technique was used after Hurricanes Ivan (2004) and Wilma (2005).

In Belize, researchers began scaling these efforts up by establishing 11 coral nurseries in 2009.

Staghorn and elkhorn corals can produce upward of 300% of their original mass in just ONE year using artificial substrates (e.g., ropes, metal frames and cement discs on tables). These restoration efforts in Belize emphasize the search for genotypes that are the strongest and most naturally resistant to global climate change and disease. We need to expand this strategy throughout the Caribbean Basin. A promising example is the Laughing Bird Caye National Park in southern Belize, which enjoys full protection (no fishing allowed). Research shows that in areas where lobster and other predators have been wiped out, coral-eating snails flourish, thus endangering nature’s natural balance. Replenishment zones such as Laughing Bird need to be encouraged and supported.

## Annex 2 Documents and photos of the process to create Community Advisory Councils

### *Workshop*

*Community Advisory Councils for Cordelia Bank: Consolidation and capacity meeting.*

*Roatan, Bay Islands. May 14<sup>th</sup>, 2010*

### Background (history, culture, communities)

*Location of the Bay Islands.-* The Bay Islands are a group of 8 islands, 65 cays and many banks situated 20 to 50 miles away from mainland Honduras. This Honduran department or state is located 15 52” to 16 32” latitude north and 85 45” and 87 longitude east, in the west of the Caribbean Sea, with a territorial extension of 236 km<sup>2</sup>.

Known for its reefs, the archipelago also possesses a unique structure. These islands rest upon the Bonnaca Ridge, the result of an enormous crack which runs along the ocean floor, about 400 miles northeast of the north coast of Honduras. Lava from the earth’s mantle welled up through this crack and formed the Caribbean Plate that pushes south to west, buckles and created the Bonnaca Ridge.

Roatan is the largest island and capital of this department. It is 36 miles long and approximately 4 miles at its widest point. It has a total land area of 49.07 square miles of which 02.2 is flat land. The island has 23 associated cays with a total area of 346.48 acres. Guanaja is the next in size. It is 27 miles in length and 2.5 miles in width. Its total land area is of 29 square miles with 03.5 of flat land. Utila is the smallest of this group.

*The natives “Paya” (Pech) .-* Anthropologists claim that the Paya lived in large well – organized villages (community) near to the sea. Each island housed a large community. It is believed that the Paya were in the Bay Islands from about the classic period 300 – 900 AD. The Bay Islands were considered part of the Papayeca Kingdom, which include Trujillo, part of the department of Olancho and Mosquito Coast.

*History.*- Christopher Columbus sailed onto the harbor of Guanaja with a fleet of four ships (La Gallega, La Capitana, Santiago de Palos and La Vizcaina) on his fourth and last trip to American Continent on July 30 of the year 1502.

On October 2, 1528, the Cedula Real cited by the King of Spain formally incorporated the Bay Islands (Archipelago de las Guanaja) into the province of Honduras. French buccaneers started to harass Spain's Central American colonies on their arrival to the Caribbean Islands in 1536. The French established their Bay Islands bases in the areas known today as Port Royal, French Harbour and French Cay situated in the island of Roatan. British privateers began raiding Spanish ships in 1564 and were very successful in disrupting Spanish control of Central America and the Caribbean. The British pirate bases were strategically located throughout the Bay Islands. There were bases in Guanaja, Port Royal, Coxen Hole and at Utila.

The Dutch arrived in this area around 1594. They were well organized by the Dutch West India Company, and backed by the states General of the United Netherlands. The Garifuna speaking people were brought from St. Vincent and marooned to the island of Roatan by the British Army. They were located to the north east of the community of Punta Gorda. It is reported that in the early 1600s shipwrecked slaves were integrated to the population of Saint Vincent and the Grenadines. By 1763, there was a group of Black or Negroid people who spoke the Carib language (garifuna) and practiced Carib ritual called the Black Caribs.

*Present.*- A new century arrived and the Bay Islands become the mecca of the tourist industry in Honduras, the relationship with the mainland has improved, and for the first in the history of this country, Bay Islanders have become more involved in the internal affairs that will shape the future of their department. On the 28<sup>th</sup> of November 2007, the legislative body of the Honduran Government met in a historical session held at Coral Cay in the Municipality of Roatan. The topic of discussion was *Touristic Free Zone for the Bay Islands*. This decree was signed on the December 13<sup>th</sup> during the presidency of Manuel Zelaya Rosales as a special law to promote tourism in the Bay Islands thus augmenting the revenues of the local and central government while increasing the living standards of the Bay Islands population.

*Free Tourism Zone in the Bay Islands.*- The law for a Free Tourism zone in the Bay Islands seeks to create the legal framework necessary for the establishment and operation of a Territorial Organization Regime that will operate in all Bay Islands promoting national and foreign investment in the Bay Islands. Activities from these investments will help to conserve, preserve and sustain the environment and improve the standard of living for all Bay Islands people.

*Bay Islands Culture and Tradition.*- Culture includes the arts, belief, customs, institutions and all other products of human work and thoughts created by people of group at a particular time. Tradition is the passing down of elements of culture from generation to generation especially orally. The most important aspect of Bay Island culture is the English language and dancing and singing as a very important to the Bay Islands settlers. On their arrival to these shores they brought along many of the Caribbean rhythms spirituals and secular dances, songs, parades and church variety show.

*Fisheries.*- Traditional fishermen and women work independently. They are not organized and solidarity is ensured through friends, family ties and tradition. Fish caught by these fishermen and women are consumed within their communities. For generations families have been enjoying themselves while catching seafood for home consumption and selling a few pounds to buy needed provisions. This type of fishing is normally done with hand held lines, hooks and local baits close the communities. Traditional fishing is an important food source and provides jobs for more than 550 families in the Bay Islands. Many communities such Flowers Bay, Sandy Bay, Craw Fish Rock, Saint Helene, the Utila Cays and North East Bight in Guanaja.

Fish, lobster and conchs are important resources for islanders. These products are highly valued in local and international markets. Their harvest and adequate handling has the potential to increase local incomes. The potential for developing a sports fishing industry based on the great knowledge they possess, and passed down from generation to generation is also great.

### *Community Advisory Council for Cordelia Bank*

The communities considered for be part of the Community Advisory Council for Cordelia Bank are the communities located between Flowers Bay and French Harbour.

Some of these communities are:

- ♦ *Coxen Hole.*- Is the political and governmental center of the Bay Islands. This area got its name from a pirate called John Coxen. The present day inhabitants of Coxen Hole arrived from Cayman and other Caribbean Islands in the 1830s.
- ♦ *Spring Garden.*- The terminal of the Roatan International Airport, completed in 1995, is located on Spring Garden. Brass Hill, a Paya ceremonial site, is the highest point within the island of Roatan; it is approximately 800 feet above sea level.
- ♦ *Mount Pleasant.*- Known as Los Fuertes which means the mighty or the powerful. This community was started by a group of ladinos from the mainland, Honduras in 1987. Los Fuertes and its surrounding vicinities are the fastest growing area in the Bay Islands; with a population of more than 10,000 habitants. This area is a picture of rural mainland and communities.
- ♦ *French Harbour.*- French Harbour Hill was populated in the 1850 by blacks from Cayman, Jamaica and other Caribbean Islands.

Community Advisory Council for Cordelia Bank	
Council #1	Council #2
1. Flowers Bay	1.Spanish Town
2. Bodden Bay	2.Coconut Garden
3. Pensacola	3.Isla Bonita
4. Gravel Bay	4.Spring Garden
5. Waterning Place	5.Santamaria
6. Constalation Bay	6.Los Fuertes
7. La Punta & Palos Altos	7.Monte Carmelo
8. Man Trapp & El Suampo	8.La Punta French Harbour
9. El Ticket	9.French Harbour
10. Franco Flat	10.La Loma French Harbour

11. Willy Warren	
12. Los Maestros	
13. Joes Bigh	
<b>Board Director (Junta Directiva)</b>	
Coordinator: Ricardo Alberto Benedith	Coordinator: Andy Erick Lopez
Secretary: Annelee Elizabeth James Bodden	Secretario: Hector Manuel Nolasco Rodriguez
Tesorero: Luis Orlando Elwin Canaca	Tesorera: Martha Brooks
Fiscal: Alex Mitchel Brown Hunt	
Vocal 1: Charles Thomas Connor James	
Vocal 2: Jose Elias Pineda Mejia	
Representante: Ricardo Alberto Benedith	

Process and consolidation of the Community Advisory Council  
Photographic Report

Community Advisory Council Roatan Municipal

**1** Theme:

Presentation on the Role and responsibilities of the  
Community Advisory Council

Date and Place:

Juan Brooks School, Coxen Hole/  
May 14<sup>th</sup>, 2011



Photo 1 and 2. Representatives of the Municipality of Roatan (Community Development Department) and leaders of the different community organizations.



Photo 3.

Lilibeth del Cid, ICF representative presenting what are the communities' advisory council, their aims, responsibilities, and role for the protection and conservation of the protected areas, forestry and wildlife.

Photo 4.

Biol. Rosalina Martinez, Protected Areas Specialist ICF, explains the community participation in the protected areas and explains about the Forestry and Protected Areas Laws.





Photo 5,6,7,8, 9 and 10 (left to right, up and down).

Representatives Eloisa Espinoza (Fisheries Department) explains the importance of the marine resources especially Cordelia Bank for Spawning aggregations sites and Sharks sites and presented about the Fisheries Law. Grazzia Matamoros (Roatan Marine Park) presented on the ecological importance of coral Reef Ecosystem and about this unique area for the protection of the Staghorn Coral. Jenny Myton (Coral Reef Alliance) explain about the importance of this area and presented the Report Card for the Mesoamerican Reef and Alicia Medina (WWF) and Calina Zepeda (TNC) explain the importance of the protection of this area and the zonification, how important is to work all together for the management plan with the fishermen and explain about other areas experiences.



Photo 11.

Representative of the School Departmental Direction



Photo 12.

Representative of the Fisheries communities

## Election of the Board of the Community Advisory Council (#1 and #2)

### Theme:

After the presentations about the importance of the Community Advisory Councils, the second part of the workshop was the election of the representatives for the councils.



Photo 13. Council #2 Vote for their representatives



Photo 14 and 15.

Representatives of the Community Advisory #1 and Council #2.



Photo 16. Coordinator Team (Left to Right)

Representatives: Lilibeth del Cid (ICF), Calina Zepeda (TNC), Alicia Medina (WWF), Eloisa Espinoza (DIGEPESCA), Rosalina Martinez (ICF), Estela Mejia (ICF), Grazzia Matamoros (RMP) and Mrs. Esperanza Lopez (Municipality of Roatan).